The supply of image and performance enhancing drugs (IPED) to local non-elite users in England: Resilient traditional and newly emergent methods

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Abstract

Traditional access to image and performance enhancing drugs (IPEDs) for hard-core body builders in serious free weight gyms has often been directly studied through gym owners or those close to them. In the past, the IPED using population was smaller, less mainstream and more reliant on those with the right contacts facilitating access to them. Recent evidence suggests that, as with other illicit drug markets, the IPED market has become more differentiated and has evolved to incorporate both new technologies, such as online pharmacies, as well as the new social and cultural conditions within which IPED use occurs. This chapter will draw on two distinct research studies on IPED supply at the local level: one that explores how and why traditional routes persevere in some local contexts, and a second that looks at how the social supply of IPED between gym users, along with internet sourcing is changing the shape and nature of IPED supply to other non-elite users. In a broader context of drug market differentiation and with a focus on trust, product quality and practice this chapter considers the impact that the changing nature of IPED user/supplier relationships in England.

Introduction

A range of recent research (Zahnow et al., 2017; McVeigh & Begley, 2017) has suggested that the use of image and performance enhancing drugs (IPEDs) is an area of growth internationally among traditional gym users but also, with the relatively recent consumerist 'revolution' involving the emergence of greater numbers of mainstream gyms, to be more common in mainstream populations and even, in some specific settings, to be relatively normalised (Coomber et al., 2015). However, despite emerging evidence of increased use and acceptance of IPEDs, in the general context in which it occurs, non-prescribed IPED use remains stigmatised, strictly controlled and/or illegal.

Controls on IPEDs have derived from a concern and some ongoing furore with their use in the sporting world. Sporting policy is not made in a vacuum however and resultant policies have tended to mirror the moralism and policymaking around illicit drugs in the non-sporting world already in situ (Coomber, 2014). As with many attributions relating to 'street drugs' much that has been claimed and broadly accepted about IPEDs and related risks is exaggerated, misleading or even false (López, 2011, 2013, 2014; Møller, 2011; Seear, 2014; Coomber, 1993, 2014). Nevertheless, these worst case scenario images have nonetheless been successful in establishing public images of IPED users and suppliers as having stigma akin to that applied to recreational drug users and drug dealers. A concomitant effect of this is that IPED users based in local gyms have long had to hide their activity and those that supplied this relatively select (almost sub cultural) group have done so through being close to them and in a privileged position as gym owners (van de Ven, 2016; Paoli & Donati, 2014; Coomber et al., 2015). Gym owners also had the advantage of commonly being experienced IPED users themselves; able to appear well informed about IPED and their use; informed about risks; essentially perceived to be more trustworthy than other 'dealers'; a safe source; accessible, and well connected.

The emergence of the internet has however transformed opportunities and relationships within the traditional gym milieu (as well as providing the opportunity for those not attending traditional gyms). The internet now provides access to both detailed information about IPEDs and how to approach using them, as well as online pharmacies (both 'surface net' and 'dark net') through which to directly access the drugs they learn about. Because of this, there is now a spectrum of IPED supply routes impacted by online supply opportunities: e.g., some traditional (commercially orientated) suppliers will buy from the internet and sell on; some individuals will source for personal use alone; some will access for themselves and others (friends/gym-buddies) at no financial gain to themselves and so on. This means that the nature of IPED supply – both in terms of market structure but also in terms of those involved in IPED supply – is more fragmented than at any time previously. Fragmented drug markets (Coomber, 2015) display multiple characteristics that vary over time and place and confound traditional images of a simple, single or homogenous drug market. Nuanced understanding and close observation thus becomes key to comprehending what happens in drug markets rather than an over-reliance on simple conceptual schemas such as rationale choice that tend to be applied abstractly and aggregately to contexts rather than empirical circumstances, or on the aggregation of 'big data' that similarly tends to (over)simplify and group populations accordingly.

Sympathetic to the notion of nuanced understanding of IPED drug markets, van de Ven and Mulrooney (2017) in their exploration of the 'the cultural contours of the performance and image enhancing drug (IPED) market among bodybuilders in the Netherlands and Belgium', apply a conceptual map that looks to understand the complexity of human agency and choice as embedded within the social and cultural context in which IPED use, access and supply takes

place. Simply put, such an account is sensitive to the individualistic aspects of agency that public health approaches to understanding use motivations tend to privilege with that of the social and cultural milieu that at times is of greater or lesser importance, as usefully suggested by the risk environment framework (Rhodes, 2009). As we shall see below, such a framework allows for both a relatively static and resilient pattern of traditional supply and access practices to predominate in one particular gym to be understood as well as that of a similarly 'serious' gym context where a more fragmented and fluid pattern of supply and access is evident.

Access and supply to IPED in two contrasting contexts in England

What follows is a reporting of IPED supply and access in two distinct local 'serious' (i.e. non-mainstream) bodybuilding gym contexts. In this broad context a serious gym (for the bodybuilders attending them) might be considered to be less concerned with the sleek, polished environmental décor of generic franchise gyms attended by those dipping their toe into weight based exercise or where such exercise is at a relatively non-advanced stage. 'Less serious' gyms in such franchises are also usually considered to have equipment often deemed not up to the business of serious bodybuilding (e.g. there is often a focus on 'weight-machines' rather than free weights and a presence of various other hi-tech equipment such as cardio machines. Lastly, the cultural and environmental milieu of the generic relatively sanitised environments of mainstream gyms might be more attuned to gender neutrality, fitness, and toning as opposed to testosterone fuelled bodybuilding. The two studies had differing approaches to data collection. Study A (Salinas) was an ethnographic study of an independent non-corporate 'body building gym' in an anonymised North England town. Four fieldworkers undertook 64 hours of overt systematic observations on site, recording the data via field notes and digital photography. Observations were supplemented by 20 semi-structured interviews with: the gym's owner and its duty manager (DM) — both of whom were male IPED users

and ‘commercial’ IPED suppliers; a female personal trainer who worked exclusively out of this gym and was herself an IPED user; and 17 of the gym’s male members who were recruited and interviewed directly on site – 16 of whom were IPED users. The data as it is presented here pertains to the commercial trading practices of IPEDs by the gym’s owner and his ‘right-hand man’ the DM, as well as to the gym members’ experiences of sourcing and (social) supplying IPEDs from the gym and other sources.

For Study B (Coomber), the approach employed was that of rapid appraisal, a (usually) mixed-method form of research that aims to quickly gather information in order to make an assessment of how a particular issue might be addressed in an evidenced-based manner (Coomber, 2015). In this instance a range of methods were employed in order to provide a profile of the IPEDs market in the South West England City of Plymouth. These mixed methods were mostly qualitative in design/application, but samples of IPEDs were sourced from users and suppliers, and forensic data on what the IPEDs were and what they contained was also produced and analysed. Purposive sampling was utilised and a total of 32 participants volunteered to be interviewed via the local safer injecting service and gyms. The 32 research participants that engaged in semi-structured interviews consisted of 25 local (current or recently ex) adult injecting IPED users (eight of whom were also ‘social suppliers’ of IPEDs – i.e. IPED *users* who also supplied, *for little or no profit*, to IPED using friends or acquaintances); four local gym owners/managers, and three local ‘commercial’ IPED suppliers. For the forensic analysis, 19 different samples of local ‘street’ IPEDs were sourced from two key persons (one a supplier, one a well-placed user) of which 10 were analysed using gas chromatography–mass spectrometry (GC–MS) and reported on.

Study A: the ‘hard-core’ traditional body-builder gym

This gym was located in a large industrial unit. It provided a wide range of plate-loaded and cardio machines; a strongman area (e.g. tractor tires and Atlas stones); boxing and a mixed-martial arts area; as well as a sunbed and sauna. At the time of study, the gym had between 300 and 400 members[1] aged between mid-teens and late-forties/early-fifties, of which just 15 were female.

The gym had in the past been raided by the police on suspicion of drug offences[2], though no charges were brought in connection to these raids. Despite owning several other businesses, the gym's owner spent much of his time here on site: advising and supporting members with their training, dietary and IPED regimes; weight training; as well as arranging deals on the phone with IPED labs or other IPED suppliers.

The use and acceptability of IPEDs in the 'hard core' gym

Staff and member interviewees estimated that between '70' and '99.9' per cent of the gym's total membership were IPED users – with most estimates placing the figure closer to 70 per cent. All bar one of the interviewees had used IPEDs and 14 were on-cycle (i.e. using) at the time of their interview. Interviewees spent between £20 and £60 each a week on IPEDs and recalled extensive lists of IPEDs used at different points in their training careers. An interviewee, who had been an IPED user for less than a year, noted:

> [I'm currently taking] Sust[anon] – the 1-mil snap-offs… and Deca [Durabolin] with the Test Max 450… I've had Naps 50's [tablets], Oxymethalone… Dianabols 10-milligram… I've been on Trenbolone, it's a ripper I've done that about five months ago. [A16]

Disinfectant wipes and 'sharps bins' for the disposal of used needles were accessible for members and were provided and disposed of by a local harm prevention team. Fieldworkers observed members and staff openly injecting themselves or others in the changing room, the sunbed area and, most commonly, the staff office. IPED use was not merely condoned but rather was actively facilitated and supported by the gym and its staff members. Both the owner and DM advised members on which IPED items to use, the dosage, length of cycle and how to treat negative side effects (e.g. informally prescribing the breast cancer treatment drugs Letrozole or Arimidex for sore or painful nipples). The pair also advised on injection practices and could if asked inject members with IPEDs. As noted, the owner and DM also supplied IPEDs to many of its members.

The Gym as an IPED Bazaar

Admission and membership fees generated a proportion of the gym's total revenue with additional income coming from the sale of training supplements.[3] However the gym's primary source of revenue – estimated by the owner to be roughly £1,500 a week – came from the sale of IPEDs and drugs taken to mitigate their negative side-effects:

> Quite frankly, this gym wouldn't be worth having if it didn't sell gear [IPEDs]… Just steroids in general. [I] sell more steroids than protein… I can make more [money] off that stuff than fuckin' membership, by a far really. [Gym owner]

A range of IPEDs were readily accessible directly within the gym via the owner, DM, their affiliates and, to an unknown extent, other members.[4] The owner estimated that 70 per cent of members who used IPEDs sourced their supplies from him, and all bar two of the IPED-user interviewees ranked the gym (i.e. the owner and duty manager) as their primary source of

supplies. Nonetheless, interviewees also reported having sourced IPEDs from friends or suppliers not connected to this gym.

Items were relatively inexpensive for consumers yet their mark-up from wholesale to retail made their trade financially worthwhile. The gym routinely doubled its investment on IPEDs: e.g., one particular HCG item was purchased wholesale from a foreign supplier at an equivalent price of £10 per-unit and retailed to the gym members for £20. The gym's owner was, to a lesser extent, also involved in wholesaling IPEDs. He sold consignments of HGH every few weeks to a supplier in a neighbouring city and wholesaled IPEDs to local customers who resold them to friends and associates, as one gym member explained:

> I always try and get people on the gear [*laughs*]. I sell it myself so I'm like *Get on this*. They're always like *Ah, you look fucking well, look at the size*. And I say *You could be like this too, I've got some stuff for you*. [A16]

The gym occupied a unique role in the lives of its members: it was the site in which individuals trained; where they sought advice and guidance; where they sourced their legal training supplements; and where many sourced a significant proportion of their IPEDs and side-effect medications. From the perspective of the suppliers the sale of IPEDs were an intrinsic component of the gym's business model and indeed of greater commercial necessity than other revenue streams such as legal supplements (e.g. protein) and membership fees.

IPED Quality/Potency

Interviewees believed a significant proportion of the stock trading in the underground IPED economy was counterfeit ("fake") and of a lower potency than pharmaceutical grade supplies

i.e. items produced in accredited laboratories. Users were resigned to the belief they would at some point inject or consume "dud gear" regardless of its source, and viewed this as largely unavoidable:

> It's all a risk from where anybody's getting it from. They [suppliers] can [falsely] tell you they're getting it from somewhere – even this stuff now [Laboratory name, being sold by the gym] – it could be from anywhere. It could just be anything. [A6]

Staff and members used a range of proxy indicators to judge the quality/potency or authenticity of IPEDs:

- Cost – the more expensive an item the higher its perceived quality.
- Packaging – poor labelling was seen as indicative of poor quality items.
- Colour and consistency of liquid-form AAS – certain items were believed to have a particular look to them e.g. a "treacle" consistency or "Coca Cola" appearance.
- The demonstrable gains of others e.g. "If you see other lads looking good and that, you're like, *what's he taking*. You ask him. He tells you. You buy it" [A16].
- Immediate physiological effects: e.g., in the case of the AAS Trenbolone, heavy coughing fits and the tightening of one's airway (the "Tren cough") immediately after injecting supposedly signified high potency.
- Short-to-midterm physiological effects – physiological indicators, such as flu-like symptoms, becoming "hot and bothered", "sore sides".
- Mid-to-long term physiological effects – if the desired outcome was realised (e.g. accelerated muscle mass) the item was believed to be of good quality.

- Such judgments were evidently subjective and in no way provided accurate assessments regarding the composition or strength of an item. Nonetheless, in a market believed to be awash in "duds", "fakes", and "copies" such assessments were the only measures available to prospective users.

The gym as a reliably honest source?

The IPEDs sold by the gym came professionally packaged, with holographic stickers, lot numbers and expiration dates attached to the bottle or box; thereby giving the impression of professional quality assurance and authenticity. The gym owner neither adulterated nor repackaged the items, which were sold in the same state/form as they arrived. Nevertheless, a proportion of items being sold were evidently not pharmaceutical quality/grade, as the owner admitted:

> [Pointing at item A] That's really, really strong Tren[bolone]. And then for instance this [item B] is the cheaper Tren… At the end of the day I'm a businessman and sometimes I have bought stuff that's not the best. I'll say to my mates and my members, *Look it's not the best but it's cheap*. And sometimes they'll still buy it and sometimes they'll go *Oh I'll wait for the better stuff*. I'm dead honest with that.

Fieldworkers documented a number of IPEDs being sold at two different prices: a cheaper version marketed as a less potent imitation ("generic copy") and a costlier one marketed as a more potent "genuine" one. Members tended to opt for the more expensive item, believing "if it's generic… it's not going to be as strong and [is] just not worth… parting with my money"

[A3]. The cheaper versions were generally bought by members intending to resell these items for-profit:

> They'll [owner/DM] say *do you want the better stuff or do you want some cheaper stuff?* Or *if you're getting them for a mate do you want to make some money?* [A12]

By distinguishing between "genuine" and "generic copies" (i.e. weak items) of stock the gym was able to market itself as an honest supplier; a commercial strategy intended to retain customers (cf. van de Ven and Koenraadt, 2017). Despite largely positive customer reviews regarding IPEDs sold at the gym, some members reported experiencing what they believed to be substandard effects/gains from items marketed as high-quality:

> [It was] meant to be Oxymetholone Naps… [The owner] said the chap he bought them off told him… they were good. They were shit… I think there's more flour in them than anything else. [A3]

Supplier/Customer Trust

There was universal reluctance among Study A's sample to purchase IPEDs from unknown sources, particularly from internet sites such as online pharmacies. Individuals were unable to use the proxy indicators (listed above) to judge the quality of items marketed online before ordering/paying, and there was there no obvious recourse if an item was later judged to be "dud". For example, a gym member explained:

> You don't know where you're getting [if buying online], you don't know what's in it… I wouldn't chance that. [A14]

By contrast, face-to-face suppliers – such as the gym staff – were assumed to be more trustworthy than anonymous internet sources. First, these IPED suppliers were perceived to care more for the welfare of their friends (or members/customers) than an anonymous internet supplier:

> You don't know what's in it when you buy it off people, but I've got a better element of trust with him [here]. I know he wouldn't rip me off. The internet – you don't know what it is. [A13]

Second, these suppliers marketed the items they sold and their effectiveness via their own demonstrable gains during/following a course. Third, from a strictly business-orientated viewpoint the success of a 'closed' commercial drug market such as the one operated by the gym owner and DM relied upon repeat custom and customer referrals. As one interviewee noted, "Reputation is everything when it comes to steroids… If one person says you're selling dodgy gear or fake then that's it" (A13). Reputation was of paramount concern for those hoping to sustain a commercial foothold in this market (cf. van de Ven and Koenraadt, 2017), as the duty manager made clear:

> All the lads who come to the gym, you want them to look good, you want them to come back to you for more so you want to give them the best. You're not going to give them the shit stuff. You want them to spend their money. You want them to come back and look good.

Though some members trusted the gym suppliers implicitly:

> I know where they [IPEDs] come from… I know it's the best… [They're] getting it direct from the lab… They say to us exactly what's in them… They're the best and the strongest [IPEDs]. [A8],

Most of our gym-member interviewees articulated a level of scepticism regarding any underground suppliers' ability to know what precisely was in their products or at what strength:

> There's no difference from buying them off the internet in sealed tubs to buying them here [at the gym]. I'm not going to know [the quality] until I've taken them… You kind of trust them [here]. [A10]

In general, once users had found a reliable source – based on their experience of IPEDs purchased – they tended to stick with the same supplier and brand. Yet, as noted above, given the proliferation of "fakes", "duds" and poor "generic copies" interviewees were often stoic regarding the authenticity of any item they consumed.

Study B: Shifting terrain and moving with the times?

The broad picture provided by Study B was of a relatively small commercial IPED market in the city. Three or four main commercially motivated suppliers from outside city were said to be involved; they then supplied to others, like the gym owner described in Study A – hybrids between street dealers and wholesalers. Broadly, interviewees described a historical context

of IPED supply across Plymouth and the country generally, where gyms/gym owners, such as that in Study A, were seen as the traditional suppliers. However, the growth of IPED use – like the growth in prevalence and relative normalisation of other illicit drugs (cf. Coomber et al., 2015) – means that there has been a widening of supply routes, not least the example of 'connected users' (i.e. 'brokers') supplying friends and other acquaintances. Paralleling some parts of the broader illicit recreational drug market, many users in Study B source their IPEDs from co-bodybuilders who 'help them out' (Coomber et al., 2015). Arguably, this "social supply" is quite different from the kind of commercial supply of "dealers proper" (Coomber & Moyle, 2014).

One of the key respondents in Study B was a professional/competitive body-builder who was also a Plymouth gym owner. He openly supplied/sold IPEDs to bodybuilders, provided them with "harm-reduction" information and also showed those that requested it how to inject (he was a trained nurse but no longer practising). He also provided most of the samples that were tested for the project. He was very willing to be interviewed, was comfortable being open about the sales of IPEDs he made and how he sourced them. If not exactly an advocate of IPED use, he believed that informed, safe and sensible use of IPEDs was possible and that it should not be an offence to do so. He was open about the local supply and use scene and was keen to know what the IPEDs he used/supplied contained. Further key persons were two other gym owners (one of which was a recent ex-supplier of IPEDs) and a close companion of a high-profile internationally renowned IPED-using body-builder. The latter considered himself very well connected and was confident that the IPEDs he sourced from the northern English city of Leeds provided him with authentic IPEDs (samples of which he also provided to the project) superior to those that could be sourced in Plymouth where he lived.

Forensic analysis of IPEDs sourced directly from users and suppliers

To provide context to users and suppliers beliefs and actions study two had a forensic component whereby IPED samples were obtained from suppliers/users in the city of Plymouth. A total of 19 samples were obtained overall. Two of these samples were known to have been sourced from Leeds, and were considered to be "genuine" high quality IPEDs. The injectable samples were either unused residue left in re-sealable vials or full samples from unopened vials. Each was provided, along with original packaging, directly to the laboratory for storage and analysis. All tablet samples were of complete tablets and were also provided in the original packaging to the laboratory for testing. All samples appeared authentic to the naked eye and both users and suppliers were convinced of the genuineness of the samples they had provided.

Ten of the samples were analysed by gas chromatography–mass spectrometry (GC–MS), and a spectral matching approach (National Institute of Standards and Technology (NIST) reference data) was used to identify sample components. Overall the analysis produced fairly damning findings with only three that could be considered to be "genuine", in that they appeared to contain the labelled ingredients. Seven were classifiable as "fakes", with none of the labelled compounds detected. Although full concentration measures of the steroids in the samples that did contain the advertised substance were not determined the analysis did suggest that concentrations were much lower than would be expected suggesting these were also low quality fakes, albeit ones that had tried to provide the desired substance but probably had sub-standard production processes.

One sample contained no steroids or likely identifiable excipients. Two other samples contained fatty acids and were potentially little more than vegetable, seed or nut oil. As

previously noted, the two samples from Leeds were expected to be higher quality than the other samples supplied but one had no active ingredient present and the other only a trace (non-dose) amount of the labelled drug.

Overall then, the samples analysed were of a poor quality, and for the most part the stated active ingredient could not be detected. None were found at the labelled levels or above. Despite this it is clear that the production process is not completely hap-hazard. In the majority of cases some logical consideration informed the product design with additives selected to improve the user experience by, for example, making injection easier, reducing pain at the injection site or improving flavour – an approach consistent with findings from "street" drug markets (Coomber, 2006).

How and where users access IPEDs

As is common with the supply recreational street drugs (cf. Coomber & Turnbull, 2007) non-commercial suppliers were important sources. Most of the users stated they obtained their IPEDs either through "friends" or the gym (i.e. either someone that attended the gym or someone who worked there/owned it). Just over a third of users reported having themselves supplied IPEDs to other IPED users. Often, such supply involved no profit and was merely facilitative (brokering), i.e. the act of a "go-between: (Murphy, Reinarman, & Waldorf, 1990). Such acts would at times include minor financial renumeration or a small share of the product supplied as payment in-kind, but did not resemble an act of "dealing" as it is conventionally understood:

> [I] used to buy for other friends too, but then just bought for myself… [also has bought for others] 'once or twice' who didn't know how to get them and 'written training programmes for them'. [G5]

In addition to buying through a friend or friends-of-friends, a degree of group buying – where users purchase greater amounts by 'chipping in' higher sums of money together, often using a 'designated buyer' (Moyle & Coomber, 2015) – was also a common practice:

> Normally [I] buy for myself but will buy for others as the gym owner does not want lots of people coming directly to him, especially young lads. He will not sell to young lads. I've bought steroids for other people 10–12 times a year. [G13]

Friends were considered much easier to trust than anonymous online suppliers, especially those that were also well-informed, experienced users or bodybuilders. This would locate them as a "good" source of supply and why some chose, or rather chose not, to source steroids and other IPED from the internet. As in the conventional street drug market (Moyle & Coomber, 2015), some prestige was seen to be derived from assisting access to IPEDs for those without contacts or uncomfortable with dealing directly with a seller unknown to them.

The internet as a ready source for IPEDs

For many, accessing IPEDs from internet pharmacies was not generally seen as a viable option – despite popular conception that this is a primary route. For many this was because buying IPEDs per se was seen as risky (e.g. possible exposure to enforcement agencies) and thus the cause of some apprehension. Buying online was also seen as impersonal and there was a lack

of trust in the veracity of what was being marketed. There was a general association of trustworthiness to purchased IPEDs if the person that supplied was known/trusted:

> With the internet you never know what you're going to get. I'm prepared to do it in person, trust the guy I mean. My friend knew the guy [supplier] so it made it a bit easier…It never crossed my mind that they might be fake. [G02]

Overall, and perhaps unsurprisingly given the amount of everyday online exchange people now engage in, there were some mixed views regarding online sites purportedly selling IPEDs:

> [I source mine] from the internet. You've just got to trust it really, I sort of went through a few but… it's just from trust really. It's coming from Thailand but the actual one I'm getting, I think is made in Pakistan but it's coming from Thailand. [5A]

There was also some confusion over whether or not the internet was actually a cheaper source of IPEDs than traditional markets ("No, the internet's a lot, lot more [expensive]. I'd say definitely five to ten pounds more" [G6]). Online price differentiation/variation however was reported (e.g. "20ml multi-shot £25 upwards" [G13]).

Opinions on the 'purity' or quality of sourced IPEDs

As we have seen from the analysis of the obtained samples, only a few of them actually contained what the packaging indicated and even those appeared to contain very low levels of the expected active ingredients. Despite poor quality being found in the samples tested here and consistently in the IPED literature (e.g. Walters, Ayers, and Brown, 1990; Thevis et al.

2008; Kohler et al., 2010; Coopman and Cordonnier , 2012; da Justa Neves, Marcheti, & Caldas, 2013), few of the users distrusted the general reliability of the IPEDs that they accessed regularly. As in Study A, some users here even believed that they had the capability to recognise authentic or effective substitutes:

> Orals I can generally taste. I can bite into it and has a different taste to it but I can probably tell if it's [fake]… You can just tell the taste if it's Dianabol or Oxymetholone. I can generally tell. [G6]

Some, though, understood that quality was not assured:

> As far as testosterone goes it's like Russian Roulette: you either get the real stuff or you don't. You either get over-dosed stuff or under-dosed stuff or you get it on the dot [...] or you don't get stuff at all. [G6]

As with the samples provided by our suppliers and users unreliable products often now, unlike previously, come with excellent, convincing packaging virtually indistinguishable from the genuine product. Yet – as was observed in Study A – it is clear that many still look for imperfections in product or packaging as a reliable guide to authenticity ("Smells musky; packaging" [G13]). The problem of inauthentic and/or poor quality IPEDs appears to be a constant and real issue for IPED users yet few appear to believe (in contradiction to the available evidence) that the problem exists to the point whereby effective IPED enhanced training regimes would be critically undermined. Lay methodologies for detecting fakes and poor quality IPEDs are clearly ineffective and something akin to cognitive dissonance enables users to buy in to the current black market that likely serves them very badly. It seems equally

clear that trust imbued relationships in the supply of IPEDs continues to have a strong role in maintaining both sourcing practices and use.

Conclusion

IPED use has expanded beyond the professional competitive sport arena and has become increasingly commonplace among the general populations of many countries, including the United Kingdom (McVeigh and Begley, 2017). As with other controlled 'traditional' substances such as cocaine or heroin, users are restricted to buying these drugs from unregulated illicit markets i.e. the underground economy. However studies indicate a relative absence of organised crime groups within the lower stages of the illicit supply chain with many IPED users sourcing items from 'closed' social networks (Van Hout and Kean, 2015; van de Ven and Mulrooney, 2017; cf. *UNODC, 2013*). Indeed, van de Ven and Mulrooney (2017) demonstrate that for many IPED users, sources of supply are often embedded within the relations and structures of informal (sub)cultural groupings aligned to bodybuilding gyms. As our data further elucidates, gyms are the 'traditional' social arena through which many IPED users access these substances, via fellow gym-goers/friends or gym staff including the gym owner. Indeed, within these settings the use (and supply) of IPEDs appears to be largely normalised features of daily life — a supplement to strict dietary and gym training regimes.

Despite the growth of 'surface web' sites and online pharmacies selling purported IPEDs (Antonopoulos and Hall, 2016; Brennan et al., 2016; Kraska et al., 2010) – many users featured in Study A and B appeared reluctant to engage with these virtual markets. Interviewees viewed these sites cautiously, seeing them as unreliable, potentially harmful (in terms of the contents of the goods sold) and at times more expensive than 'traditional' markets. Users almost universally opted instead to source IPEDs from their social networks – either from friends or

gym acquaintances. Though many of those interviewed believed they could independently ascertain the authenticity (or at least quality) of many IPEDs using proxy indicators, most placed significant faith in those social contacts who supplied them. Nevertheless, users were aware this was an illicit economy saturated by inauthentic drugs being manufactured illegally and without due oversight (McVeigh and Begley, 2017). Study B's forensic analysis of IPEDs showed how even "well connected" veterans of bodybuilding and gym culture fell prey to inauthentic duplications. Indeed, only three of the 10 IPEDs forensically studied could be considered authentic, while seven contained none of the compounds stated on the packaging. All of these issues raise questions of both compromised training and the potential for seriously compromised health.

The public health concerns for the unsupervised/unsanctioned/untrained use (especially the injection of) IPEDs is meaningful. As with any drug use, exceeding normative IPED doses, combining IPED inappropriately and extended use over time can all contribute to significant health risks (e.g. van Amsterdam, Opperhuizen, & Hartgens, 2010; Kanayama, Brower, Wood, & Hudson, 2009). When this circumstance is further compounded, as it is when using illicit inauthentic substances, with unsupervised/untrained use/injecting of various (in reality) unknown substances which may then be combined with further unknown substances the risks are both unknown and can increase further. So, although this research suggests that many of the drugs IPED users source are either low in strength or contain no active ingredients others may be over-strength or simply different to what is labelled. Users simply cannot know. Injecting fake/low quality drugs alone or in combination also carries its own risks beyond the presence of what is in the sourced product (e.g. poor injecting technique alone can lead to abscesses and other serious health problems whilst poor injecting practices such as the sharing of needles carries the risk of transmitting blood borne viruses such as HIV and hepatitis B/C.

Traditional modes of drug supply and the 'support' structures present therein mitigate against user-buyers' anxiety in relation to the quality of the product they have sourced and the risks that might be present.

We find then that although the internet has ushered in a new era in terms of both legal and criminal supply chains, 'traditional' drug market structures continue to dominate the consumer-end of the IPED market. Predicated on trust, these closed drug markets provide reassurance — however unjustified — to consumers that what they are ingesting (often intravenously) is neither dangerous nor adulterated/weak. Users and suppliers are often invested in mutual relationships and users can often look to the advice and experience of others in the network. The resistance of the 'traditional' IPED markets, for now at least, stems from their accessibility, support and perceived safety. The harm reduction community needs to do more to inform users of the precariousness of their actions and of the substances they source.

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[1] Precise membership figures were unobtainable as most attendees opted to pay per training session and simply singed-in by hand, with just over 50 paying via a formalised monthly membership system.

[2] The owner had purchased the gym a decade earlier using profits acquired from a lucrative cocaine wholesaling career. It is unclear precisely which drug offences these raids related to, as there was there was significant overlap between his involvement in the cocaine market and IPED market.

[3] Including: protein (bars, brownies, shakes and tubs of protein powder e.g. *USN*); pre-workout drinks/gels (e.g. *NO Xplode*); vitamins and amino acids (e.g. *RSP Amino Lean*); creatine; and bottled water. The gym also sold t-shirts, training vests and hooded-tops emblazoned with the gym's logo.

[4] Members were forbidden from selling IPEDs on the premises because their revenues were necessary for the effective running of the gym's business (e.g. new equipment and sponsorship of members competing in strongman or bodybuilding).